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Asset management — Overview, principles and terminology

Gestion d'actifs — Aperçu général, principes et terminologie

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT) see the following URL: Foreword - Supplementary information

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The committee responsible for this document is Project Committee ISO/PC 251, *Asset management*.

This corrected version of ISO 55000:2014 incorporates the correction of the numbering of definitions 3.2.4 to 3.2.7 and corresponding cross-references.

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Introduction

0.1 Purpose

This International Standard provides an overview of asset management and asset management systems (i.e. management systems for the management of assets). It also provides the context for ISO 55001 and ISO 55002.

International cooperation in the preparation of these standards has identified common practices that can be applied to the broadest range of assets, in the broadest range of organizations, across the broadest range of cultures.

0.2 Relationship with other standards

ISO 55001, ISO 55002 and this International Standard relate to a management system for asset management, which is referred to as an "asset management system" throughout the three standards.

ISO 55001, ISO 55002 and this International Standard can be used in combination with any relevant sector or asset type-specific asset management standards and technical specifications. ISO 55001 specifies requirements for an asset management system, while the other standards detail sector-specific, asset-specific or activity-specific technical requirements or give guidance on how ISO 55001 should be interpreted and applied within a specific sector or to particular asset types.

0.3 Target audience

This International Standard is primarily intended for use by:

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— those considering how to improve the realization of value for their organization from their asset base

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— those involved in the establishment, implementation, maintenance and improvement of an asset management system

— those involved in the planning, design, implementation and review of asset management activities; along with service providers.

0.4 Benefits of the standards

The adoption of ISO 55001, ISO 55002 and this International Standard enables an organization to achieve its objectives through the effective and efficient management of its assets. The application of an asset management system provides assurance that those objectives can be achieved consistently and sustainably over time.

Annex A provides additional information on areas related to asset management activities.

Annex B shows the relationship between key elements of an asset management system.

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Asset management — Overview, principles and terminology

1 Scope

This International Standard provides an overview of asset management, its principles and terminology, and the expected benefits from adopting asset management.

This International Standard can be applied to all types of assets and by all types and sizes of organizations.

NOTE 1 This International Standard is intended to be used for managing physical assets in particular, but it can also be applied to other asset types.

NOTE 2 This International Standard does not provide financial, accounting or technical guidance for managing specific asset types.

NOTE 3 For the purposes of ISO 55001, ISO 55002 and this International Standard, the term "asset management system" is used to refer to a management system for asset management.

2 Asset management

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2.1 General

The factors which influence the type of assets that an organization requires to achieve its objectives, and how the assets are managed, include the following:

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— the nature and purpose of the organization;

— its operating context;

— its financial constraints and regulatory requirements;

— the needs and expectations of the organization and its stakeholders.

These influencing factors need to be considered when establishing, implementing, maintaining and continually improving asset management.

Effective control and governance of assets by organizations is essential to realize value through managing risk and opportunity, in order to achieve the desired balance of cost, risk and performance. The regulatory and legislative environment in which organizations operate is increasingly challenging and the inherent risks that many assets present are constantly evolving.

The fundamentals of asset management and the supporting asset management system introduced in this International Standard, when integrated into the broader governance and risk framework of an organization, can contribute tangible benefits and leverage opportunities.

Asset management translates the organization's objectives into asset-related decisions, plans and activities, using a risk based approach.

2.2 Benefits of asset management

Asset management enables an organization to realize value from assets in the achievement of its organizational objectives (see 2.5.3.4). What constitutes value will depend on these objectives, the nature and purpose of the organization and the needs and expectations of its stakeholders. Asset management

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supports the realization of value while balancing financial, environmental and social costs, risk, quality of service and performance related to assets.

The benefits of asset management can include, but are not limited to the following:

a) **improved financial performance**: improving the return on investments and reducing costs can be achieved, while preserving asset value and without sacrificing the short or long-term realization of organizational objectives;

b) **informed asset investment decisions**: enabling the organization to improve its decision making and effectively balance costs, risks, opportunities and performance;

c) **managed risk**: reducing financial losses, improving health and safety, good will and reputation, minimizing environmental and social impact, can result in reduced liabilities such as insurance premiums, fines and penalties;

d) **improved services and outputs**: assuring the performance of assets can lead to improved services or products that consistently meet or exceed the expectations of customers and stakeholders;

e) **demonstrated social responsibility**: improving the organization's ability to, for example, reduce emissions, conserve resources and adapt to climate change, enables it to demonstrate socially responsible and ethical business practices and stewardship;

f) **demonstrated compliance**: transparently conforming with legal, statutory and regulatory requirements, as well as adhering to asset management standards, policies and processes, can enable demonstration of compliance;

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g) **enhanced reputation**: through improved customer satisfaction, stakeholder awareness and confidence;

h) **improved organizational sustainability**: effectively managing short and long-term effects, expenditures and performance, can improve the sustainability of operations and the organization;

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i) **improved efficiency and effectiveness**: reviewing and improving processes, procedures and asset performance can improve efficiency and effectiveness, and the achievement of organizational objectives.

2.3 Assets

An asset is an item, thing or entity that has potential or actual value to an organization. The value will vary between different organizations and their stakeholders, and can be tangible or intangible, financial or non-financial.

The period from the creation of an asset to the end of its life is the asset life (see 3.2.2). An asset's life does not necessarily coincide with the period over which any one organization holds responsibility for it; instead, an asset can provide potential or actual value to one or more organizations over its asset life, and the value of the asset to an organization can change over its asset life.

An organization may choose to manage its assets as a group, rather than individually, according to its needs, and to achieve additional benefits. Such groupings of assets may be by asset types, asset systems, or asset portfolios.

2.4 Overview of asset management

2.4.1 General

An organization's top management, employees and stakeholders should implement planning, control activities (e.g. policies, processes or monitoring actions) and monitoring activities, to exploit opportunities and to reduce risks to an acceptable level.

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Asset management involves the balancing of costs, opportunities and risks against the desired performance of assets, to achieve the organizational objectives. The balancing might need to be considered over different timeframes.

Asset management enables an organization to examine the need for, and performance of, assets and asset systems at different levels. Additionally, it enables the application of analytical approaches towards managing an asset over the different stages of its life cycle (which can start with the conception of the need for the asset, through to its disposal, and includes the managing of any potential post disposal liabilities).

2.4.2 Fundamentals

Asset management is based on a set of fundamentals.

a) **Value**: Assets exist to provide value to the organization and its stakeholders.

Asset management does not focus on the asset itself, but on the value that the asset can provide to the organization. The value (which can be tangible or intangible, financial or non-financial) will be determined by the organization and its stakeholders, in accordance with the organizational objectives.

This includes:

1) a clear statement of how the asset management objectives align with the organizational objectives;

2) the use of a life cycle management approach to realize value from assets;

3) the establishment of decision-making processes that reflect stakeholder need and define value.

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b) **Alignment**: Asset management translates the organizational objectives into technical and financial decisions, plans and activities.

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Asset management decisions (technical, financial and operational) collectively enable the achievement of the organizational objectives.

This includes:

1) the implementation of risk-based, information-driven, planning and decision-making processes and activities that transform organizational objectives into asset management plans (see 2.5.3.4);

2) the integration of the asset management processes with the functional management processes of the organization, such as finance, human resources, information systems, logistics and operations;

3) the specification, design and implementation of a supporting asset management system.

c) **Leadership**: Leadership and workplace culture are determinants of realization of value.

Leadership and commitment from all managerial levels is essential for successfully establishing, operating and improving asset management within the organization.

This includes:

1) clearly defined roles, responsibilities and authorities;

2) ensuring that employees are aware, competent, and empowered;

3) consultation with employees and stakeholders regarding asset management.

d) **Assurance**: Asset management gives assurance that assets will fulfil their required purpose.

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The need for assurance arises from the need to effectively govern an organization. Assurance applies to assets, asset management and the asset management system.

This includes:

1) developing and implementing processes that connect the required purposes and performance of the assets to the organizational objectives;

2) implementing processes for assurance of capability across all life cycle stages;

3) implementing processes for monitoring and continual improvement;

4) providing the necessary resources and competent personnel for demonstration of assurance, by undertaking asset management activities and operating the asset management system.

2.4.3 The relationship of the asset management system to asset management

An asset management system is used by the organization to direct, coordinate and control asset management activities. It can provide improved risk control and gives assurance that the asset management objectives will be achieved on a consistent basis. However, not all asset management activities can be formalized through an asset management system. For example, aspects such as leadership, culture, motivation, behaviour, which can have a significant influence on the achievement of asset management objectives, may be managed by the organization using arrangements outside the asset management system. The relationship between key asset management terms is shown in Figure 1.

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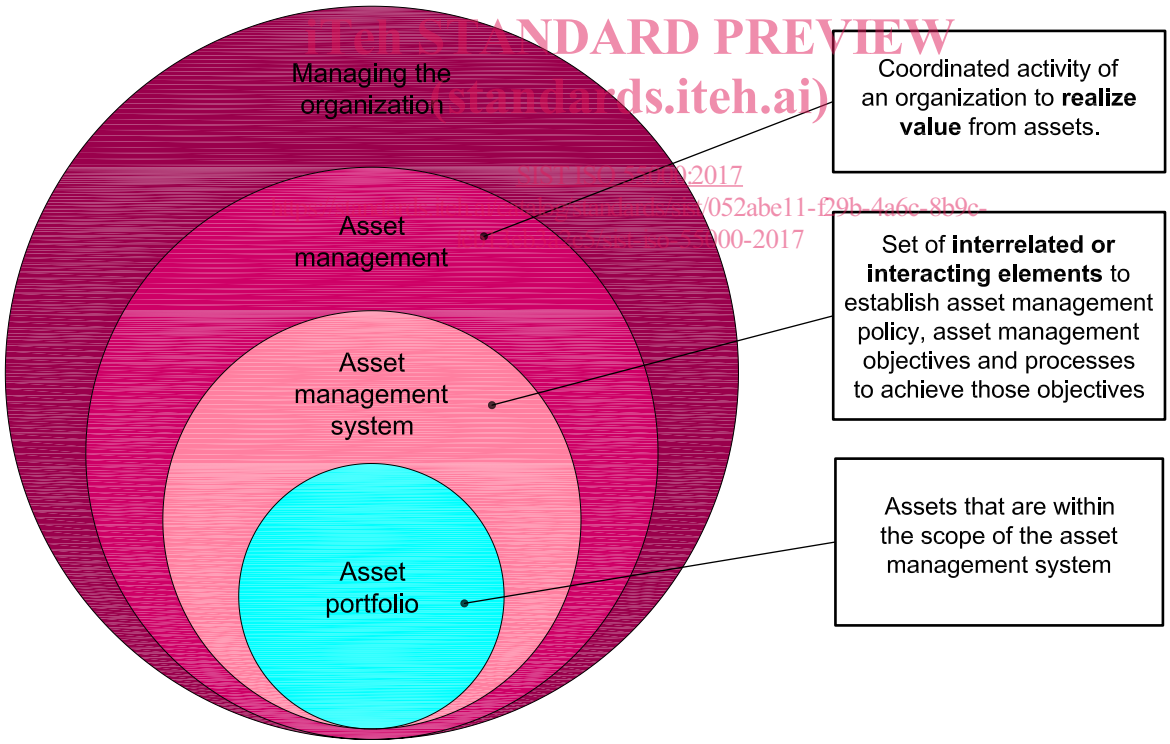
Managing the organization
Asset management
Asset management system
Asset portfolio
Coordinated activity of an organization to **realize value** from assets.
Set of **interrelated or interacting elements** to establish asset management policy, asset management objectives and processes to achieve those objectives
Assets that are within the scope of the asset management system

Figure 1 — Relationships between key terms

2.5 Overview of the asset management system

2.5.1 General

An asset management system is a set of interrelated and interacting elements of an organization, whose function is to establish the asset management policy and asset management objectives, and the processes, needed to achieve those objectives (see 3.4.3). In this context, the elements of the asset management

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system should be viewed as a set of tools, including policies, plans, business processes and information systems, which are integrated to give assurance that the asset management activities will be delivered.

Asset management requires accurate asset information, but an asset management system is more than a management information system. Asset management interacts with many functions of an organization. The assets themselves can also support more than one function and more than one functional unit within the organization. The asset management system provides a means for coordinating contributions from and interaction between these functional units within an organization.

The asset management plan can enable an organization to create a link, if needed, between its asset management system (such as described by ISO 55001, ISO 55002 and this International Standard) and a variety of specific, technical asset management requirements. These specific, technical requirements are given in standards both inside and outside the ISO environment, and at the international, regional or national standardization levels; such standards provide information on strategies and tactics, as well as specific design, construction, material or process requirements. The definitions given in 3.4 refer specifically to the asset management system described in this International Standard; some of these terms may be defined differently for a specific, technical standard.

The establishment of an asset management system is an important strategic decision for an organization. ISO 55001 specifies the requirements of an asset management system, but does not specify the design of the system. ISO 55002 provides guidance on the design and operation of an asset management system.

2.5.2 Benefits of an asset management system

An asset management system provides a structured approach for the development, coordination and control of activities undertaken on assets by the organization over different life cycle stages, and for aligning these activities with its organizational objectives.

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a) Creating an asset management system provides benefits in itself.

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The process of implementing an asset management system can require significant time effort and expense; however, the organization does not need to wait until the entire system is fully operational to begin accruing benefits. The benefits, or quick wins, in areas such as risk reduction, opportunity identification or process improvement can be identified early in the implementation, and can be exploited to demonstrate returns and gain stronger stakeholder support.

— Asset management is data intensive and new tools and processes are often necessary to collect, assemble, manage, analyse and use asset data. The creation and use of these tools can stimulate and improve organizational knowledge and decision making.

— The process of creating an asset management system brings new perspectives to the organization and new ideas on value creation from the use of assets. These new perspectives can also stimulate improvements in other organizational functions, such as purchasing, finance, human resources and information technology.

— The creation of an asset management system is usually cross-functional and based on life cycle considerations; this can provide a focal point for addressing the issues of functional integration of the organization and life cycle planning.

b) Top management benefits from new insights and cross functional integration.

An asset management system can help in gaining an understanding of assets, their performance, the risks associated with managing assets, investment needs, and asset value as an input to decision making and organizational strategic planning.

— Top management should recognize the need to improve communication and interaction across functions. An asset management system inherently supports this interaction. It ensures that assets are managed in an integrated manner, and asset value is improved.

— An asset management system supports a long-term and sustainable approach to decision making.

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